What is Claimed:

1. A system for approximating flux density of light on a retina, the system comprising:

a housing defining an inside and having an opening allowing light to pass to the inside of the housing;

a baffle coupled to the housing, the baffle replicating the facial cutoff function for the light passing to the inside of the housing;

a first detector positioned to detect the light inside the housing, the first detector producing a photopic spectral response function of the light inside the housing that approximately replicates a spectral response of foveal cones;

a second detector positioned to detect the light inside the housing, the second detector producing a scotopic spectral response function of the light inside the housing that approximately replicates a spectral response of rods in the retina; and

a processor coupled to the first and second detectors, the processor being configured to calculate a flux density of the light inside the housing based on the photopic and scotopic spectral response functions.

2. The system of claim 1, wherein the first detector includes a first filter producing the photopic spectral response function and the second detector includes a second filter producing the scotopic spectral response function.

3. The system of claim 2, wherein the first detector includes a first photocell producing a first signal weighted by the photopic spectral response function and the second detector includes a second photocell producing a second signal weighted by the scotopic spectral response function.

4. The system of claim 3, further comprising a signal transmission means for transmitting the first and second signals to the processor.

5. The system of claim 1, wherein the first detector includes a first photocell producing a first signal weighted by the photopic spectral response function and the second detector includes a second photocell producing a second signal weighted by the scotopic spectral response function.

6. A system for approximating a flux density of light on a retina, the system comprising:

a housing defining an inside and having an opening allowing light to pass to the inside of the housing;

a baffle coupled to the housing, the baffle replicating a retinal spatial response for the light passing to the inside of the housing;

a first detector positioned to detect the light inside the housing, the first detector producing a first signal approximately replicating a spectral response of cones in the retina to the light inside the housing;

a second detector positioned to detect the light inside the housing, the second detector producing a second signal approximately replicating a spectral response of rods in the retina to the light inside the housing; and

a processor coupled to the first and second detectors for receiving the first and second signals, the processor being configured to calculate a flux density of the light inside the housing based on the first and second signals.

7. The system of claim 6, further comprising a beam splitter for transmitting the light inside the housing into at least two directions.

8. The system of claim 6, further comprising a beam splitter for transmitting a first portion of the light inside the housing toward the first detector and for transmitting a second portion of the light inside the housing toward the second detector.

9. The system of claim 6, further comprising a lens coupled to the housing for focusing the light inside the housing, wherein the baffle surrounds the lens.

10. The system of claim 6, wherein the first detector includes a first filter producing the photopic spectral response function and the second detector includes a second filter producing the scotopic spectral response function.

11. The system of claim 10, wherein the first detector includes a first photocell producing a first signal weighted by the photopic spectral response function and the second detector includes a second photocell producing a second signal weighted by to the scotopic spectral response function.

12. The system of claim 6, wherein the first detector includes a first photocell producing a first signal weighted by the photopic spectral response function and the second detector includes a second photocell producing a second signal weighted by to the scotopic spectral response function.

13. A method of approximating a peripheral-photopic luminance of light incident on a combination of foveal and peripheral cones of a retina, the method comprising the steps of:

producing a first signal weighted by a spectral response of the foveal cones to the light and proportional to a first flux density of the light received by the foveal cones;

producing a second signal weighted by a spectral response of rods in the retina to the light and proportional to a second flux density of the light received by the rods; and

applying a function to the first and second signals to approximate the peripheral-photopic response.

14. The method of claim 13, wherein the function comprises the steps of:

calculating a first luminance on the foveal cones based upon the first retinal flux;

calculating a second luminance on the rods based upon the second retinal flux; and

calculating the peripheral-photopic luminance based upon the first and second luminances.

15. A method of approximating a mesopic retinal flux density of light incident on a combination of cones and rods of a retina, the method comprising the steps of:

producing a first signal weighted by a spectral response of the cones to the light and proportional to a first flux density of the light received by the cones;

producing a second signal weighted by a spectral response of the rods to the light and proportional to a second flux density of the light received by the rods; and

applying an algorithm to the first and second signals to determine the mesopic retinal flux density.

16. The method of claim 15, wherein the function includes the steps of:

calculating a first photopic luminance based upon the first retinal flux;

calculating a second scotopic luminance based upon the second retinal flux;

calculating a third peripheral-photopic luminance based upon the first and second luminances; and

calculating the mesopic flux density based upon the third peripheral-photopic luminance.

17. A machine-readable storage medium containing a set of instructions for a general purpose computer, the set of instructions implementing the steps of:

producing a first signal weighted by a spectral response of the foveal cones to the light and proportional to a first flux density of the light received by the foveal cones;

producing a second signal weighted by a spectral response of rods in the retina to the light and proportional to a second flux density of the light received by the rods; and

applying a function to the first and second signals to approximate the peripheral-photopic response.

18. A machine-readable storage medium containing a set of instructions for a general purpose computer, the set of instructions implementing the steps of:

producing a first signal weighted by a spectral response of the cones to the light and proportional to a first flux density of the light received by the cones;

producing a second signal weighted by a spectral response of the rods to the light and proportional to a second flux density of the light received by the rods; and

applying an algorithm to the first and second signals to determine the mesopic retinal flux density.